

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference Case 21409	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 03/10489	International filing date (day/month/year) 22/09/2003	(Earliest) Priority Date (day/month/year) 27/09/2002
Applicant ROCHE VITAMINS AG		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :
 - contained in the international application in written form.
 - filed together with the international application in computer readable form.
 - furnished subsequently to this Authority in written form.
 - furnished subsequently to this Authority in computer readable form.
 - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. **Certain claims were found unsearchable** (See Box I).

3. **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

- the text is approved as submitted by the applicant.
- the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant.
- the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

- as suggested by the applicant.
- because the applicant failed to suggest a figure.
- because this figure better characterizes the invention.

None of the figures.

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International Application No

PCT/EP 03/10489

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C12P17/04 C12P7/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 C12N C12P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, EMBASE, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 242 233 B1 (SUGISAWA TERUHIDE ET AL) 5 June 2001 (2001-06-05) table 1B	9
Y	column 10, line 11 - line 16; claim 5; table 1B ---	3, 4, 10
Y	EP 0 832 974 A (HOFFMANN LA ROCHE) 1 April 1998 (1998-04-01) SEQ ID NO:8 page 2, line 1 - line 2 claims 1,15-19; examples 4,8-11; table 10 ---	1-8, 10
Y	EP 0 911 415 A (HOFFMANN LA ROCHE) 28 April 1999 (1999-04-28) examples 2,3 ---	1, 2, 5-8
		-/-

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

9 February 2004

16/02/2004

Name and mailing address of the ISA
 European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Gruber, A

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 03/10489

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SAITO Y ET AL: "CLONING OF GENES CODING FOR L-SORBOSE AND L-SORBOSONE DEHYDROGENASES FROM GLUCONOBACTER OXYDANS AND MICROBIAL PRODUCTION OF 2-KETO-L-GULONATE, A PRECURSOR OF L-ASCORBIC ACID, IN A RECOMBINANT G. OXYDANS STRAIN" APPLIED AND ENVIRONMENTAL MICROBIOLOGY, WASHINGTON, DC, US, vol. 63, no. 2, 1997, pages 454-460, XP000886144 ISSN: 0099-2240 page 455, right-hand column, paragraph 4; table 1 ---	1-4,8-10
A	SUGISAWA T ET AL: "ISOLATION AND CHARACTERIZATION OF A NEW VITAMIN C PRODUCING ENZYME (L-GULONO-GAMMA-LACTONE DEHYDROGENASE) OF BACTERIAL ORIGIN" BIOSCIENCE, BIOTECHNOLOGY AND BIOCHEMISTRY, vol. 59, no. 2, February 1995 (1995-02), pages 190-196, XP001084987 ISSN: 0916-8451 page 191, right-hand column, paragraph 3 ---	1,2,5-8
A	MACAULEY S ET AL: "THE GENUS GLUCONOBACTER AND ITS APPLICATIONS IN BIOTECHNOLOGY" CRC CRITICAL REVIEWS IN BIOTECHNOLOGY, CRC PRESS, BOCA RATON, FL, US, vol. 21, no. 1, 2001, pages 1-25, XP008026977 ISSN: 0738-8551 page 12, left-hand column, paragraph 1 -page 18, left-hand column, paragraph 1 ---	1,2,8
A	HANCOCK R D ET AL: "Biotechnological approaches for l-ascorbic acid production" TRENDS IN BIOTECHNOLOGY, ELSEVIER PUBLICATIONS, CAMBRIDGE, GB, vol. 20, no. 7, 1 July 2002 (2002-07-01), pages 299-305, XP004361398 ISSN: 0167-7799 page 300, left-hand column, paragraph 2 -page 301, left-hand column, paragraph 1 ---	1,2,8
		-/-

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BOUDRANT J: "MICROBIAL PROCESSES FOR ASCORBIC ACID BIOSYNTHESIS: A REVIEW" ENZYME AND MICROBIAL TECHNOLOGY, STONEHAM, MA, US, vol. 12, no. 5, 1 May 1990 (1990-05-01), pages 322-329, XP000646789 ISSN: 0141-0229 page 323, left-hand column, paragraph 3 -page 325, left-hand column, paragraph 2 -----	1,2,8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

(EP 03/10489)

Patent document cited in search report	Publication date		Patent family member(s)		Publication date
US 6242233	B1	05-06-2001	BR 9805685 A CA 2253023 A1 CN 1225390 A EP 0922759 A2 IN 187978 A1 JP 11225754 A US 2001026933 A1		11-04-2000 01-06-1999 11-08-1999 16-06-1999 03-08-2002 24-08-1999 04-10-2001
EP 0832974	A	01-04-1998	EP 0832974 A2 BR 9704748 A CN 1183472 A JP 10229885 A		01-04-1998 10-11-1998 03-06-1998 02-09-1998
EP 0911415	A	28-04-1999	EP 0476442 A2 EP 0911415 A2 AT 180831 T CN 1060111 A ,B CN 1274756 A DE 69131286 D1 DE 69131286 T2 DK 476442 T3 JP 3086301 B2 JP 4281785 A US 5250428 A		25-03-1992 28-04-1999 15-06-1999 08-04-1992 29-11-2000 08-07-1999 11-11-1999 15-11-1999 11-09-2000 07-10-1992 05-10-1993